J. GROSZKOWSKI

vation of the oscillator frequency — caused by the generation of harmonics — from the resonant frequency of the circuit, this being in agreement with the author's theory of reactive power balance in non-linear oscillator systems.

GROSZKOWSKI, J.

621.373.422 : 621.3.011.3/.4

761.   ARC INDUCTANCE AND DYNATRON CAPACITANCE.
J. Groszkowski.
Bull. Acad. Polon. Sci. Cl. 4, Vol. 2, No. 1, 41-5 (1954).
    It is shown that although the arc can have some inductive
properties and the dynatron some capacitive ones these are
not indispensable to a theoretical explanation of associated
phenomena. These properties represent a kind of image of
the resonant circuit in the negative resistance, which, on
account of harmonics, causes a phase shift between the volt-
age and the current of the fundamental frequency.   S.C.Dunn

GROSZKOWSKI, J.

POL.a

621.372.41

3728. ' On the extension of the principle of imaginary power balance of harmonics to circuits with continuous spectra. J. GROSZKOWSKI. *Bull. Acad. Polon. Sci. Cl. 4, 2, No. 5, 151-5 (1934).*

The principle of imaginary harmonic power balance derived previously for oscillating circuits with line spectra [*Proc. Inst. Radio Engrs*, 21, No. 7, 958-81 (*July*, 1933)] is generalized to cover the case of circuits with continuous spectra. The application of the principle to oscillations in a series RLC circuit provides an alternative method of verifying the well-known formula for the spectral density. G. D. SIMS

Groszkowski, J.

On the extension of the principle of imaginary power balance of harmonics
to circuits with continuous spectra. In English. p. 137, Vol. 2, no. 3, 1954,
   BULLETIN, Dep't of Technical Sciences, Polish Academy of Sciences
SO: MONTHLY LIST OF EAST EUROPEAN ACCESSIONS, (MEAL), Vol. 4, No. 9, LC,
Sept.1955, Uncl.

GROSZKOWSKI, J

POL. ◄

621.373.4
  The Nonlinear-Theory Approach to Resistance-
Capacitance Oscillators.—J. Groszkowski. (Bull.
Acad. polon. Sci., Classe 4, 1952, ..., pp. 185-
188. In English.) Exact calculations can be made using
nonlinear theory based on the balance of the reactive
power of the harmonics involved. The analysis indicates
that the frequency stability when operating near the
limit conditions is generally better with RC than with
CR networks.

GROSZKOWSKI, J

1895.   THE NON-LINEAR THEORY APPROACH TO RESIST-ANCE-CAPACITANCE OSCILLATORS.   J.Groszkowski. 681.373.42

Arch. elektrotech. (Warsaw), Vol. 3, No. 3, 561-574 (1954).
In Polish with summary (3 pp.) in English.

Using the author's non-linear theory (Abstr. 518C/1954), the fundamental equation for the balance of the reactive power of harmonics is derived for one-valve relaxation RC oscillators. The frequency of oscillation is shown to depend on the valve characteristics; for limit conditions (sinusoidal oscillations) the additional amplitude condition must be satisfied, whereas beyond the threshold of regeneration (harmonic spectrum) the frequency depends also on the deviation (related to harmonic content) from the limit conditions. The explicit expressions are found for C series—R shunt and R series—C shunt arrangements, and the frequency variation appearing in the circuit (when the operating conditions pass from sinusoidal to non-sinusoidal) is discussed. Numerical examples are given for both types of oscillators.   R.Byski

GRUSZKA, M, J.

"The Extension of the Principle of the Reactive Power Balance of Harmonics To Circuits With A Continuous Frequency Spectrum", P. 499, (ARCHIWUM ELEKTROTECHNIKI, Vol. 3, No. 4, 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 5, May 1955, Uncl.

Groszkowski, J.

4075
* Groszkowski J. High Vacuum Technology. 2nd ed.
"Technologia wysokiej próżni". Wyd. 2. Warszawa, 1958 PWT, 161.
350 pp., 372 figs., 49 tabs.

Contains information concerning high vacuum technology including details of high vacuum pumps, vacuum gauges, absorbers (to restrict the degree of vacuum) as well as construction materials and glass-to-metal joints best suited to maintain a high degree of vacuum. The opening chapter of the book constitutes a brief introduction to the principles of high vacuum designing. The author concludes with a description of typical vacuum equipment and various vacuum producing systems.

Limit Cycle Period of Non-Linear Oscillation.   AS
J. Groszkowski. Bul. Acad. Polonaise Sci. (Warsaw),
No. 2, 1955, pp 85-91. 12 refs. Formulas for the
limit cycle period based on the principle of imigi-
nary (reactive) power balance of harmonics with the
coefficient selected according to boundry conditions.

(Clipped Abstract)

Groszkowski, J.

621.396.611.1

Groszkowski J. The Limit-Cycle Period of Nonlinear Oscillation.
"Okres graficznego cyklu drgania nieliniowego". Archiwum Elektrotechniki (PAN), No. 2, Warszawa, 1955, PWN, pp: 269—278, 1 fig., 1 tab.

Here are included two forms of formulae for determining the limit-cycle period of the nonlinear equation $\ddot{x} - v(1-x^2)\dot{x} + x = 0$ for all values of $v(0 < v < \infty)$, viz,

$$\frac{T_1}{T_0} = \left[1 + 0.066 \frac{15 + v^4/_3}{8 + v^4/_3} v^4\right]^{1/_3}$$

$$\frac{T_1}{T_0} = \left[1 + 0.066 \frac{60 + v^2}{12 + v^2} v^2\right]^{1/_2}$$

These formulae were established on the basis of the method of the reactive power balance of harmonics; the coefficients were found from the boundary conditions ($v \to 0$ and $v \to \infty$). The formulae are in reasonable agreement with the formulae obtained by approximative methods for values $v \approx 0$ and $v \approx \infty$. A table compares results obtained by several formulae (those of Fisher, Shohat, Dorodnicyn and Urabe) and the error-values and results obtained by other means.

GROSZKOWSKI, J

481.   LIMIT CYCLE PERIOD OF NON-LINEAR OSCIL-
LATION.   J.Groszkowski.
Bull. Acad. Polon. Sci. CI-4,   Vol. 3, No. 2, 85-91 (1955).
Two formulae are quoted for the limit cycle period.
These are relatively simple and agree well with other justi-
fiable formulae.   Their shape was fixed by considering the
principle of imaginary power balance of harmonics, the co-
efficient being selected according to boundary conditions.   A
table is given, summarizing the results obtained by using
various formulae, and the discrepancies thus revealed.
                                                    A.V.Payne

GROSZKOWSKI, J.

621.373.421.11

Frequency Stability of LC Oscillators with Large Grid and Anode Capacitances.—J. Groszkowski. (Bull. Acad. polon. Sci., Classe 4, 1955, Vol. 3, No. 3, pp. 149–153. In English.) General analysis is given for the Clapp circuit. Various factors affecting the frequency and the optimum distribution of instability components among the circuit elements and supply voltages are discussed. See also 3170 of 1954 (Clapp).

GROSZKOWSKI, J.

    The limit-cycle period of the non=linear oscillation.   p. 269.
ARCHIWUM ELEKTROTECHNIKI. Waszawa. Vol. 4, no. 2, 1955

Source: East European Accessions List, (EEAL), Lc, Vol. 5, No. 3, March, 1956

GROSZKOWSKI, J.

    The limit cycle of oscillation systems with a single distinct energy-

storing element. P. 5C9.   Vol. 4, No. 4, 1955

ARCHIWUM ELEKTROTECHNIKI
Warszawa

SCURCE: East European Accessions List (EEAL), LC, Vol. 5, March 1956 No. 3

GROSZKOWSKI, J.

4628.   THE LIMIT CYCLE OF OSCILLATING CIRCUITS WITH A SINGLE DISTINCT ENERGY STORING ELEMENT.   J. Groszkowski. Arch. elektrotech. (Warsaw), Vol. 4, No. 4, 509-20 (1955). In Polish.

The processes taking place in a relaxation circuit, excited by negative resistance with lossless characteristics, are discussed. The effect of the residual element (L in a RC-oscillator or C in a RL-oscillator) is taken into account. The waveforms of current and voltage for different elements of a RC relaxation oscillator are shown on graphs.   M.W.Makowski

GROSAKOWSKI, J.

Frequency stability of LC oscillators with large grid and
anode capacitances. In English. p. 145. ODZIEL. Lodz. Vol.
3, no. 3, Mar. -May 1956.

SOURCE: East European Acession List (EEAL) Library of Congress
Vol. 5, no. 8, August 1956.

GROSZKOWSKI, J.

The Frequency of Oscillators with Grid Current. J. Groszkowski. Bul. Acad. Polonaise Sci. (Warsaw), No. 8, 1956, pp. 193–196. Method for expressing the frequency of an oscillator as a function of the harmonic spectrum of both the anode and grid currents.

SOV/112-58-1-1268

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1958, Nr 1, p 191 (USSR)

AUTHOR: Groshkovskiy, Ya.

TITLE: Frequency of Oscillators With Grid Current
(Chastota generatorov s tokom setki)

PERIODICAL: Byul. Pol'skoy AN, 1956, otd. 4, Vol 4, Nr 3, pp 205-208

ABSTRACT: An investigation based on a nonlinear analysis was conducted of a
master oscillator with grid current. An expression is offered for the relative
deviation of oscillator frequency from the resonance frequency of its tuned
circuit; the deviation is the sum of relative deviations of oscillator frequency
caused by: resistance of the tuned circuit; fundamental component of the grid
current; and harmonics of the anode current, the grid current, and of the
anode and grid currents jointly. Expressions for determining these partial
relative-frequency deviations are presented. Upon introducing certain simpli-
fications, approximate formulas are obtained for overall relative-frequency
deviation for the three classical oscillator circuits: Hartley circuit, Colpitts

Card 1/2

Frequency of Oscillators With Grid Current

SOV/112-58-1-1268

circuit, and the inductive anode-grid coupling circuit. It is expected that the complete paper will be published in Archiwum Electrotechnici in 1957, in Polish. Bibliography: 4 items.

AVAILABLE: Library of Congress

V. Z. P.

1. Oscillators--Frequency measurement   2. Electric circuits--Performance

Card 2/2

Category : POLAND/Radiophysics - Generation and conversion of radio-frequency   I-4
oscillations

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1838

Author   : Groszkowski, J.
Title   : Frequency Stability of LC Oscillators with Large Capacitances in the Grid
and Anode Circuits.

Orig Pub : Arch. elektrotechniki, 1956, 5, No 1, 35-68

Abstract : Taking the nonlinearities of the characteristics and the interelectrode
capacitances into account, an analysis is made of an LC oscillator with large
capacitances in the grid and anode circuits and with a series resonant cir-
cuit between the grid and the anode. The reactive power balance for the
harmonics is used to derive an expression for the fundamental frequency of
the oscillator. Equations are derived to describe the frequency instabilities
occuring when the parameters of the tank circuit and of the tube are changed.
General recommendations are made for improvement of the frequency stability.
The effects of variations in the supply voltages on the nonlinear parameters
of the oscillator are examined. A connection is established between these
parameters and the self-excitation amplitude of the oscillator, the second-
harmonic amplitude, etc. An example of the design of an oscillator using an
EF50 pentode is given.

Card   : 1/1

14(0)   PHASE I BOOK EXPLOITATION   SOV/2573

Groszkowski, Janusz, Doctor, Engineer. Professor, Warsaw Engineering College

Tekhnologiya vysokogo vakuuma (High Vacuum Technology) Moscow. Izd-vo
inostrannoy lit-ry, 1957. 539 p. No. of copies printed not given.
Translation of: Technologia wysokiej prozni. 2d ed. Warsaw, 1955.

Ed. (title page): Reykhrudel', E.M., Professor; Translator: Bulat, V.L.,
Docent; Ed. (inside book): Telesnin, N.L.; Tech. Ed.: Gribova. M.P.; Managing
Ed. for Literature on Physics (Izd-vo inostrannoy lit-ry): Sokolov, A.A.,
Professor.

PURPOSE: This book is intended for physicists, engineers, personnel of scientific
research laboratories and industries using vacuum systems and their components.
It may also by used by postgraduate students and students specializing in
fields which require the use of vacuum apparatus and equipment.

COVERAGE: This book describes modern methods of obtaining and measuring a high
vacuum. It includes the most important accomplishments in the field as re-
flected in foreign literature, and in particular, the accomplishments of Poland,

Card 1/28

, High Vacuum Technology   SOV/1051

Czechoslovakia and other Soviet satellite countries. An effort is also made
to consider contributions of the Soviet Union. The working principles of
various pumps and manometers, structural layout of joints and seals in a vacuum
system, and materials used in vacuum technology are described in detail. The
author mentions several Soviet physicists and engineers who are working in
this field: S.A. Vekshinskiy, N.A. Kaptsov, A.A. Ivanov, S.V. Ptitsyn, K.D.
Sinel'nikov, N.D. Morgulis, and G.A. Tyagunov. The editor states that the
author is one of the greatest Polish specialists in high-frequency elect-
ronics and high vacuum technology, and is well-known for his book Generirovaniye
vysokochastotnykh kolebaniy i stabilizatsiya chastoty (Generation of High-
frequency Fluctuations and the Stabilization of Frequencies). There are 406
figures, 46 tables and 60 references, of which 18 are Soviet, 12 Polish, 16
German, 17 English and 6 French.

TABLE OF CONTENTS:

Card 2/28

POLAND/Radio Physics - General   I-1
Abs Jour : Ref Zhur - Fizika, No 5, 1958, No 11243

Author   : Groszkowski J.
Inst   : Technical University, Warsaw, Poland
Title   : LC Oscillator Parameters and Frequency Stability

Abstract : An investigation was made of the frequency stability of a LC
           oscillator with respective variations in the magnitude of
           the negative resistance for a specified degree of regeneration
           in steady-state operation. It is shown that the stability is
           determined by the L/C ratio, by the magnitude of the negative
           resistance, and by the degree of non-linearkty, but not by the
           Q of the tank circuit.

Card   : 1/1

GROSZKOWSKI, J

GROSZKOWSKI, Janusz; NOWACKI, Witold

Some experiences from work on national plans of scientific research.
Review Pol Academy 5 no.3/4:1-18 Jl-D '60.

(Science)   (Research)

9.3220 (1013,1040)

33576
S/194/61/000/012/084/037
D271/D301

AUTHOR: Groszkowski, J.

TITLE: Frequency of auto-oscillations in circuit with non-linear negative resistor

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 12, 1961, 8, abstract 12I59 (Bull. Acad. polon. sci. Ser. sci. techn., 1960, v. 8, no. 10, 601-606)

TEXT: A series circuit is considered consisting of a non-linear inductance

$$L' = L(1 + \lambda i^2) \quad (\lambda \lessgtr 0)$$

linear capacitance C, linear resistance R and a non-linear negative resistance described by

$$U_r = - ri + r\rho i^3 \quad (r, \rho > 0)$$

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33576

Frequency of auto-oscillations ...   S/194/61/000/012/084/097
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Instantaneous value of the magnetic flux is

$$\varphi = L'i = Li + \lambda Li^3$$

Taking into account the third harmonic, the current in the circuit is

$$i = I\left[\sin \omega t + h \sin 3\omega t + \alpha\right]$$

where $h = \dfrac{I_3}{I}$ is the coefficient of the third harmonic. It is assumed that oscillations are near-sinusoidal ($h \ll 1$), $\rho I^2 \ll 1$, $\lambda I^2 \ll 1$ and $\omega^2 \cong \omega_0^2 = \dfrac{1}{LC}$. The phase and amplitude of oscillations are found from the condition

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33576

Frequency of auto-oscillations ...   S/194/61/000/012/084/097
D271/D301

$$U_R + U_r + U_L + U_c = 0 \ (i \neq 0)$$

When expressions for voltage drop, taking into account third har-
monic, are substituted into the above equation, the required depen-
dence is found of the self-oscillation frequency on the current I
and on the parameters of non-linear elements:

$$\omega = \omega_o \quad \text{when} \quad \lambda = 0;$$

when I increases, ω increases if $\lambda > 0$ and decreases if $\lambda < 0$. A
corresponding dependence on the coefficient h was obtained. Similar
results can be obtained for a parallel circuit with a non-linear
capacitance. 3 references. (Radio Inst., Warsaw Technical Univ.,
Poland.) $\underline{/}$Abstractor's note: Complete translation.$\underline{/}$

Card 3/3

GROSZKCWSKI, J.

Pulse compression of gas by untight piston. Bul Ac Pol Tech 8
no.11/12:667-672 '60.

1. Radio Institute, Warsaw Technical University.

GROSZKOWSKI, J.

The thermal vacuum gauge in pulse pressure operation. Bul Ac Pol
tech 9 no.1:45-51 '61.   (EEAI 10:9)

1. Department of Electronics, Institute of Fundamental Technical
Problems, Polish Academy of Sciences.

(Vacuum gauges)

24,6000,

AUTHOR: Groszkowski, J.

TITLE: Gas desorption during rubbing of surfaces in high
               vacuum

TEXT: Liberation of gas was observed during the rubbing of glass
or metal surfaces in vacuum. A glass cylinder (7 mm diameter and
30 mm length) sealed at both ends and containing an iron core was
placed inside the bulb of a Bayard-Al'pert ionization manometer.
After degassing and having obtained ultra-high vacuum (10^{-8} mm Hg)
the bulb of the manometer was sealed off. After swinging and rota-
ting the manometer, owing to which the glass cylinder rubbed against
the walls of the bulb, the pressure in the manometer increased to
7×10^{-5} mm Hg. As soon as rubbing ended, the gas liberated was
rapidly absorbed and this occurred even without participation of
Card 1/2

S/058/62/000/004/150/160
A061/A101

AUTHOR: Groszkowski, J.

TITLE: Unreliability of ionization gauges and its consequences

PERIODICAL: Referativnyy zhurnal, Fizika, no. 4, 1962, 16, abstract 4-3-32s
             ("Bull Acad. polon. sci. Sér. sci. techn.", 1961, v. 9, no. 4, 235 -
             237, English; Russian summary)

TEXT: Reading errors of the Bayard-Alpert vacuum gauge (BAVG) at pres-
sures between 10^{-6} and 10^{-8} mm Hg and the effect of BAVG on the pressure in the
system were examined. The device consisted of BAVG and a reciprocating resistance
manometer, connected through a valve with an oil-vapor diffusion pump equipped
with a CO_2-cooled trap. The capacity of the apparatus up to the valve was 1.5
liters. The rate of evacuation was 25 l/sec. The apparatus was heated to $350°C$
for 3 hours. BAVG was degassed in the usual manner for 30 min. The apparatus
was then evacuated to $\sim 10^{-7}$ mm Hg, the valve shut, and air was fed to the ap-
paratus until a pressure of $5 \cdot 10^{-5}$ mm Hg was attained. Thereupon, the valve was
re-opened, and a diagram of the pressure drop in the system was plotted. The ex-
periments were conducted with the BAVG switched on and off. When it was switched

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Unreliability of...

on, pressure dropped to $3 \cdot 10^{-7}$ mm Hg after 50 min, and the readings of BAVG corresponded to those obtained with the reciprocating gauge. When BAVG was switched off, pressure dropped to $4 \cdot 10^{-8}$ mm Hg after 15 min. A rapid pressure rise was observed when BAVG was switched on. The experimental results were practically independent of pump-trap cooling conditions. There are 2 references. [Radio Institute of Warsaw University, Polish People's Republic].

M. Ye.

[Abstracter's note: Complete translation]

Card 2/2

S/274/63/000/001/010/020
D469/D308

AUTHOR: Groszkowski, J.

TITLE: Influence of the supply voltage on the frequency of self-oscillators

PERIODICAL: Referativnyy zhurnal, Radiotekhnika i elektrosvyaz', no. 1, 1963, 33-34, abstract 1B245 (Bull. Acad. pol-on. sci. Ser. sci. techn., 1961, v. 9, no. 11, 625-632 (Eng.: summary in Rus.))

TEXT: When the supply voltage of a valve oscillator changes, causing variations of inter-electrode capacitances and of mutual conductance, the stability of oscillator frequency is disturbed. A change of cathode-grid capacitance C_{gk} has an especially large influence on the frequency. A tetrode oscillator circuit is considered here. It follows from the equations obtained that the influence of variation of the C_{gk} capacitance on the oscillator frequency is reduced when the Q-factor of the circuit and the mutual conductance are increased. The stability is improved with an increase of induc-

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S/274/63/000/001/010/020
D469/D308

Influence of the supply ...

tance in the resonant circuit, particularly when the equivalent capacitance is approximately equal to the self-capacitance of the inductance coil. The choice of large inductances is specially recommended when the valve input capacitance is sensitive to changes of the supply voltage. Experiments made with a tetrode oscillator, connected in the Colpitt's circuit, have shown that a 10% change of the supply voltage causes a relative change of frequency by $- 4 \times 10^{-6}$. The frequency change is reduced when inductance increases. The oscillator data re $L = 10^{-6}$ h, $Q = 200$, $f = 10^8$ c/s, $S = 2 \times 10^{-3}$ $\underline{a}$.
$\underline{}$
$\qquad$ v

/Abstracter's note: Complete translation_/

Card 2/3

P/019/61/010/003/005/008
D265/D305

AUTHOR: Groszkowski, J.

TITLE: Pulse-compression thermal vacuum gauge

PERIODICAL: Archiwum elektrotechniki, v. 10, no. 3, 1961, 763-782

TEXT: The design principle and the theory of the new pulse com-
pression vacuum gauge working on the principle of thermal conduc-
tivity is the subject of this paper. This gauge enables the vacuum
pressures of up to 10^{-7} Tr to be measured and overcomes the dis-
advantages of ionic gauges which contaminate the vacuum by mercury
vapor. The design is shown in Fig. 1 /¯Abstractor's note: Figure
is printed reverse._7. The gauge consists of the outer enclosure
inside which a glass cylinder (1) is supported. This cylinder and
the piston which moves inside are highly polished and lapped. An
opening (12) connects the cylinder to a small cylindrical vessel
(13) which is situated close to another similar vessel inside the
enclosure. Both vessels are lined with platinum and house platinum
heating elements which form two branches of the Wheatstone bridge,

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Pulse-compression thermal ...

P/019/61/010/003/005/008
D265/D305

the remaining two branches of which are fixed resistances. The dif-
ference of gas pressures inside the cylinder results in different
resistances of platinum elements which are reflected by the galva-
nometer dial deflection originally set for zero position. The the-
ory of the pulse compression principle is described in detail and
the behavior of the resistance elements undergoing the pulse com-
pression and the bridge accuracy and sensitivity of readings are
analyzed. Factors affecting these values are stated. At the pres-
sure of 10^{-7} Tr max. the galvanometer current was 8×10^{-8} A which
corresponded to the dial deflection of 8 mm. for a galvanometer of
internal resistance $R_\rho = 2000\,\Omega$ and needle deflection of 1 mm for
the current of 1×10^{-8} A. The resistance element was made of pla-
tinum strip $2\mu \times 50\mu \times 3$ cm and its resistance $R_1 = 60\,\Omega$ at 600°K.

For calibration of the pulse compression vacuum gauge an ionic
Bayard-Alpert type of vacuum gauge was used and the calibration
curve was obtained. The advantages of applying the new gauge over
the ionic one are shown by using both gauges in turn in a compara-

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Pulse-compression thermal ...

P/019/61/010/003/005/008
D265/D305

tive manner, and it was found that higher vacuum pressures were
obtained in shorter time when the pulse-compression gauge was em-
ployed in the pumping system described in this paper. There are
12 figures and 8 references: 6 Soviet-bloc and 2 non-Soviet-bloc.
The references to the English-language publications read as fol-
lows: G. Barnes: Erroneous reading of large magnitude in a Bayard-
Alpert ionization gauge and their probable cause. Rev. Sci. Instr.
31, no. 10, 1121 (1960); R. S. Bradley: A thermistor McLeod gauge
for a pressure range $1-10^{-7}$ mm of mercury. J. Sci. Instr. 31, 129
no. 4, April (1954).

ASSOCIATION: Zakład radiotechniki politechniki Warszawskiej;
               Zakład elektroniki IPPT-PAN (Radiotechnology Insti-
               tute, Warsaw Polytechnic; Electronic Institute,
               IPPT-PAS)

SUBMITTED: December 7, 1960

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Pulse-compression thermal ...
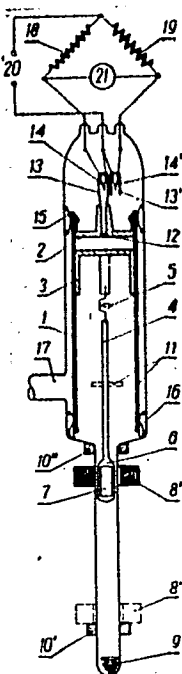
P/019/61/010/003/005/008
D265/D305

Fig. 1

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GROSZKOWSKI, Janusz

The thermo-conductive vacuum meter with impulse compression. Przegl
elektroniki 3 no.3:132 Mr '62

1. Katedra Radiotechniki, Politechnika, Warszawa.

GROSZKOWSKI, J.

Discrepancies in readings of ionization gauges. Bul Ac Pol tech
10 no.4:[225]-[229] '62.

1. Radio Institute, Technical University, Warsaw.

GROSZKOWSKI, Janusz

Electronics; its past, present, and future. Problemy 18 no.12:834-848 '62.

1. Prezes Polskiej Akademii Nauk, dyrektor Instytutu Podstawowych Problemow Techniki Polskiej Akademii Nauk, kierownik Katedry Radiotechniki Politechniki Warszawskiej, Warszawa.

GROSZKOWSKI, Janusz

Modern science in a modern state. Nauka polska 12 no.4:1-13
Jl-Ag '64.

1. Member of the Polish Academy of Sciences, Warsaw.

GROSZKCWSKI, J.

Sensitivity gain due to electron oscillations in the Bayard
Alpert ionization gauge. Bul Ac Pol tech 12 no.8;619-622 '64.

1. Department of High Vacuum Technology of the Technical
University, Warsaw.

L 64727-65

ACCESSION NR: AP5012197   PO/0095/65/013/002/0177/0184

AUTHOR: Groszkowski, J. (Groshkovskiy, Ya.)

TITLE: Collector dimensions and sensitivity in the Bayard-Alpert ionization gauge

SOURCE: Polska Akademia Nauk. Bulletin. Serie des sciences techniques, v. 31, no. 2, 1965, 177-184

TOPIC TAGS: sensitivity increase, electrode, ionization gage/ Bayard Alpert ionization gage

ABSTRACT: Several authors have studied the effect of electrode geometry on ionization gauge parameters, especially with regard to sensitivity. The effect of collector dimensions in the Bayard-Alpert gauge is particularly important in the very low pressure range where thin collectors are used to reduce the x-ray effect. The gauge sensitivity K (in mm Hg) is given by the expression

$$K = \frac{I_i}{I_e p},$$

where I_i is ionization current (amps), I_e is electron current (amps) and p is pres-

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sure (mm Hg). The relationship between collector dimensions and gauge sensitivity
is of particular interest since a reduction in collector dimensions is the best way
that has been found so far to reduce the photoeffect and perhaps other spurious ef-
fects which take place in the gauge at very low and ultra-low pressures. The col-
lector current I_c is given by the formula $I_s = I_i + I_x = Kpl_e + \xi A I_e,$ where I_i is ion

current, I_x is photoelectron current due mainly to x-radiation from the anode, ξ is
a coefficient which depends on the factors responsible for the photoeffect and A is
collector surface area. The minimum pressure of the gauge $p_{min} = 10\,\xi\,\dfrac{A}{K}$ is associat-

ed with the relationship $I_i \geqslant 10\,I_x.$ At a given ξ, the minimum pressure diminishes
with a reduction in the ratio A/K. Thus the gauge must be very sensitive with a
small collector area. In this paper, linear wire collectors of various diameters
δ_c were studied. The wire diameters ranged from 0.009 to 2.0 mm. The effect of
collector length and of its position in the electrode system were studied. Heli-
cally wound collectors, parallel wire collectors and ribbon collectors were also

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ACCESSION NR: AP5012197

studied. The results are graphed. "The author wishes to express his gratitude to
Mr. S. Dobrzynski and Mr. J. Jastrzebski for assistance in some mechanical and
glass work." Orig. art. has: 7 figures.

ASSOCIATION: Katedra wysokiej prozni, Politechnika, Warsaw (Department of High
Vacuum Technology, Technical University)

SUBMITTED: 00   ENCL: 00   SUB CODE: NP

NO REF SOV: 001   OTHER: 010

Card 3/3

GROSZKOWSKI, Janusz

    Professor Stanislaw Fryze; obituary. Przegl elektrotechn 41 no.2:
41 F '65.

L 1574-66

ACCESSION NR: AP5018532   PO/0095/65/013/004/0397/0399

AUTHOR: Groszkowski, J. (Groshkovskiy, Ya.)

TITLE: Bayard-Alpert ionization gauge sensitivity vs. collector position in anode
cross section

SOURCE: Polska Akademia Nauk. Bulletin. Serie des sciences techniques, v. 13,
no. 4, 1965, 397-399

TOPIC TAGS: ionization gage, gas discharge counter

ABSTRACT: The author studies the effect of the collector position in the cross
section of the anode cylinder on gauge sensitivity in a Bayard-Alpert ionization
gauge, when the collector wire is always parallel to the anode axis. The measure-
ments were made in the $10^{-4} - 10^{-5}$ mm Hg pressure range. Experimental error was of
the order of ±5%. The results of the measurements are given as constant sensitivi-
ty curves in fig. 1 of the Enclosure. These curves represent the relative sensiti-
vity for various positions of the collector wires in the cross section of the anode
cylinder, where the maximum sensitivity is taken as 1. The collector was 1 mm in
diameter. The same results were obtained for a 0.15 mm wire and for flattened

Card 1/3

L 1574-66
ACCESSION NR: AP5018532

anode cylinders. Orig. art. has: 2 figures.

ASSOCIATION: Katedra Wysokiej Prozni, Politechnika, Warsaw (Department of High
Vacuum Technology, Technical University)

SUBMITTED: 00   ENCL: 01   SUB CODE: NP, EC

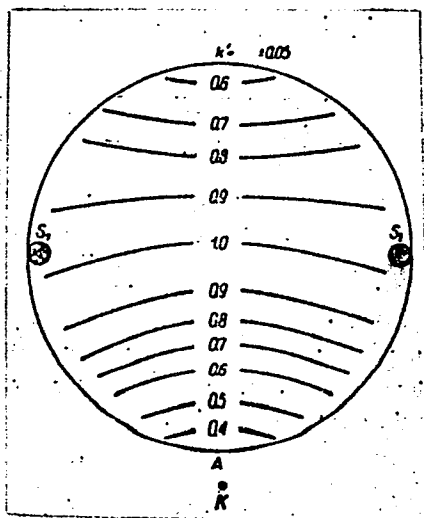NO REF SOV: 000   OTHER: 002

Card 2/3

L 1574-66

Fig. 1. Relative sensitivity curves for various collector positions in the anode cylinder cross section. Grid-shaped anode diameter D = 18 mm, winding wire diameter δ_a = 0.15 mm, winding step d_a = 2 mm, anode-cathode distance d_{ak} = 5 mm. Collector wire diameters δ_c = 0.15 and 1 mm, collector length L_c = 40 mm, S_1 and S_2—anode supporting wires.

Card 3/3

L 03765-67   EWP(t)/EII   IJP(c)   JD
ACC NR: AP6029486   SOURCE CODE: PO/0095/66/014/005/0491/0496

AUTHOR: Klamka, J.; Klyamka, Ye.; Groszkowski, J.

ORG: Department of Electronics, Institute of Fundamental Technical Problems, Polish Academy of Sciences (Zaklad Elektroniki, Instytut Podstawowych Problemow Techniki, PAN)

TITLE: Series resistance of diffused silicon varactors

TOPIC TAGS: pn junction, varactor, silicon varactor, diffused silicon varactor, varactor resistance

ABSTRACT: A method of evaluating the series-resistance (R_S) in diffused silicon varactors is presented in which the p-n junction is obtained by diffusion of impurities. Practical formulas are derived which describe the series-resistance of the p-n junction with great thickness of the base. In addition, the calculated series-resistance values are compared with microwave measurements of the varactor series. It is stated that most of the series-resistance (R_S) is connected with

Card 1/2

L 03765- 67

ACC NR: AP6029486 $\mathcal{O}$

the band of increased series resistance in the vicinity of the p-n
junction. The presence of this band has a decisive effect on the
changes in R_3 as a function of the polarization voltage. This paper
was presented by J. Groszkowski on 12 February 1966. [Translation of
abstract.]   [AM]

SUB CODE: 09/   DATE SUBM: none/   ORIG REF: 003/   OTH REF: 004

Card 2/2

L 04115-67

ACC NR: AP6031784   SOURCE CODE: PO/0019/66/015/002/0459/0476

AUTHOR: Groszkowski, J.

ORG: Department of High Vacuum, Warsaw Polytechnical Institute (Katedra Wysokiej Prozni Politechniki Warszawskicj)

TITLE: The sensitivity of the Bayard-Alpert ionization gage and its electrode dimensions

SOURCE: Archiwum elektrotechniki, v. 15, no. 2, 1966, 459. 476

TOPIC TAGS: ionization gage, electrode dimension measurement/Bayard-Alpert gage

ABSTRACT: The extension of the range of the Bayard-Alpert ionization gage towards extremely low pressures may be achieved by increasing its sensitivity and reducing the collector area. To improve the gage by this means, the part played by various factors in the gage sensitivity should be known. In spite of some information which can be found in this regard in a number of papers, a systematic investigation of the problem seemed to be necessary. For this purpose the influence of the dimen-

Card 1/2   UDC: 531. 78:537. 56

L 04115-67

ACC NR: AP6031784   ○

sions of the electrodes and their mutual position on the gage sensitivity was examin-
ed. The measurements were performed as far as possible in a continuous way
using the same type of a demountable gage in order to obtain more reliable and
reproducible results. The following measurements and examinations were made:
the influence of the dimensions (wire diameter, length) and the position of the collec-
tor in the grid-shaped anode (along the axis and in cross-section of the anode
cylinder). The helical and parallel wire collectors were examined. The influence
of the length, position (anode-cathode distance), and shape of the cathode was
determined, as well as the role played by the pitch of the windings of the grid-shaped
anode, by the anode end-coverings, and by their potential. Next, the gages with
various anode diameters and various collector lengths were examined. Finally,
the gain due to the oscillations of electrons in the anode volume was measured.
Orig. art. has: 18 figures. [Author's abstract]

SUB CODE: 09/ SUBM DATE: 12Nov65/ ORIG REF: 004/ OTH REF: 011/

kh

Card   2/2

GROSZKOWSKI, Janusz

      Electronics: past, presnt, and future. Review Pol Academy
      8 no.1:1-10 Ja-Mr '63.

GROSZKOWSKI, Janusz, prof. dr

Electronics; its past, present, and future. Nauka polska 11
no.1:5-17 Ja-F '63.

1. Czlonek rzeczywisty Polskiej Akademii Nauk, Warszawa.

GROSZKOWSKI, Janusz

     One hundred years of the existence of the American National
Academy of Sciences. Nauka polska 12 no.1:110-112 Ja-F '64.

1. Member of the Polish Academy of Sciences, Warsaw.

GROSZKOWSKI, S.

Contribution to the fight against helminthiases in the Romanian's People's Republic. I. The synthesis of hexylresorcinol. C. N. Ionescu, S. Groszkowski, and A. Serper (Pharm. Fac., Bucharest). *Acad. rep. populare Romîne, Studii cercetari chim.* 3, 13-18(1955).—This series of papers describes not so much the synthesis of new compds., but rather the synthesis of known compds. from raw materials easily available in Romania. BuOH is transformed into BuBr, which treated with $NaCH(CO_2Et)_2$ forms $BuCH(CO_2Et)_2$, which, after treatment with KOH and H_2SO_4, yields caproic acid (I). I treated with resorcinol in the presence of $ZnCl_2$ yields caproylresorcinol (II), b_2 205-8°, b_1 184-5°, m. 65-6°; oxime, shows m. 189-91° (from 50% EtOH). II undergoes a Clemmensen reduction to furnish hexylresorcinol in 70.5% yield.   W. Jacobson

GROSZKOWSKI, St.

3

The preparation of bis(aminophenyl)trichloroethane and bis(aminophenyl)dichloroethene derivatives and their activity in vitro in regard to Mycobacterium tuberculosis. I. A. Mavrodin, St. Groszkowski, and M. Balş. *Acad. rap. populare Română, Bul. şliinţ., Sect. şliinţ. teh. şi chim. 4,* 457–78(1952).—The conditions for prepn. of compds. of the class diaminodiphenyltrichloroethane and diaminodiphenyl-dichloroethene were detd. Of 36 of these compds. tested *in vitro* against *M. tuberculosis avium* 11 were effective. 1-(4-N-Chloroacetylaminophenyl)-1-(3-N-chloroacetylamino-phenyl)-2,2,2-trichloroethane is more effective than *p,p'-*diaminodiphenyl sulfone, *p*-aminosalicylic acid and TB I, but inferior to streptomycin.   T. Z. Dénesay

GROSZKOWSKI, Stefan

New derivatives of piperazine. Rocz chemii 34 no.2:707-708 '60.
(EEAI 10:1)

1. Katedra Chemii Organicznej Akademii Medycznej, Lodz
(Piperazine)

GROSZMANN, G.

The development of roentgen institutes within the five year plan.
Magy. radiol. 4 no. 4:177-182 Nov 1952.   (CLML 24:1)

1. Doctor.

932. HIGH-ENERGY RADIATIONS FOR DEEP THERAPY - Nagyenergiás su-
      gárzás mélytherápia céljára - Groszmann G. - MAG. RADIOL. 1956,
      8/3 (150-163) Graphs 6 Tables 3 Illus, 4

Comparison of the quality of the radiations issued by a commonly used 200 kv.,
a 3-Mev. Van de Graaff, a betatron apparatus and a Co^{60} source shows the super-
iority of the last one for therapeutical purposes over the above-mentioned sources
of radiation from a physical and a technical point of view, especially if the great
specific activity of the cobalt is employed. Comparative biological researches are
to be carried out with the Van de Graaff apparatus and the Co^{60} isotope for control-
ling the effect of the homogenous radiation of the Co-source with the regulable ra-
diation of the Van de Graaff apparatus.   Györgyi - Budapest

Distr: 4E2c(J)

4.   A rheological study on high-molecular materials. I.
(In German) Z. Csűrös, I. Geczy, M. Grosz-
mann, K. Juhász. Periodica Polytechnica, Chemical
Engineering. Vol. 1, 1957, No. 2, pp. 105—129, 13 figs.,
13 tabs.

The flow curves, pour points, elasticity and hardness
of typographical ductor rolls made of gelatine and starch
were determined by means of a Hoeppler consistometer.
It was found that the Herschel-Bulkley equation

$$\left(\frac{\partial \gamma}{\partial t} = A\,(\tau - \tau_0)^n\right)$$ is valid for the quasi-viscous curves

and flow curves of both materials where $n < 1$ for gelatine-
based roll materials and $n > 1$ for starch-based substances.
The starch material stands up to compressive stresses
in practice better than the gelatineous substance and
the consistency of the former changes considerably less
with the increase of temperature. The elastic properties
of the starch-containing material are more favourable
than those of the gelatineous substance since the former
undergoes greater immediate and lesser delayed and per-
manent deformation. The starch-containing roll material
is plasto-elastic below 40°C and visco-elastic above this
temperature. The corresponding characteristic tempera-
ture for the gelatineous material is 30°C.

CHEMISTRY / High Molecular Chemistry.   1

Abs Jour   : Ref Zhur - Khim., No 3, 1959, No 10562

Authors   : I. Csuros, Z.; Groszmann, M.; Geczy, I.; Juhasz, K;
              III. Csuros, Z.; Geczy, I.; Groszmann, M.; Spiegel, V.
Inst   : Not given
Title   : Rheological Studies of High Polymer Compounds. II.
              Rheological Studies of Polyvinylchloride Pastes. I.
              The Effect of Some Technological Factors on Consistency
              of Polyvinylchloride Pastes. III. Determination of Mo-
              lecular Weight of Polyethylene by the Viscosimetric
              Method.

Orig Pub   : Period. polytechn. Chem. Engng, 1957, 1, No 3, 203-215;
              217-221. Magyar tud. akad. Kem. tud. oszt. Kozl. 1958,
              10, No. 1, 67-73.

Abstract   : II. A study was made of the effect of vigorous stirring,

Card 1/3

$2 50$

              duration of stirring, and time of storage, on properties
              of pastes prepared from poly(vinyl chloride) powder and
              different plasticizers of the dialkyl phthalate series.
              For this purpose a determination was made of the visco-
              sity curves of the preparations under study. Shear
              stress was measured in the interval 10-300 g/cm^2, dis-
              placement rate varied between 0.1-5 cm/sec. Flow velo-
              city of the pastes under study is not proportional to
              shear stress. Viscosity of pastes obtained on vigorous
              stirring is higher than that of corresponding pastes pre-
              pared with gentle stirring. This difference is enhanced
              with increasing content of poly(vinyl chloride) in the
              paste. Viscosity is also increased with increased dura-
              tion of stirring. After stirring for 50-60 minutes, the
              increase in viscosity reaches maximum value. Change in

Card 2/3

Distr: AE c(j)

Chlorination of poly(vinyl chloride). II. Z. Csuros, M. Groszmann, and B. Zsuffa (Polytech. Univ., Budapest, Hung.). *Periodica Polytech.* 2, 183-7(1958): Chlorination of poly(vinyl chloride) (I) (55% Cl_2) in CCl_4, $C_2H_2Cl_4$, $C_2H_4Cl_2$, and PhCl in the presence of $TiCl_4$, PCl_5, $SbCl_5$, and BF_3 gave the highest chlorination with $SbCl_5$ in $C_2H_2Cl_4$ at 130-0°. In CCl_4 at 78° the end product had % Cl with PCl_5 = 57.0 (12 hrs.); $SbCl_5$ = 56.2 (8 hrs.); $TiCl_4$ = 56.7 (8 hrs.). In $C_2H_4Cl_2$ at 82-4° with 1% $TiCl_4$ = 58.9, 3% = 62.2, 5% = 60.3% Cl; with 3% PCl_5 = 59.8, with 5% PCl_5 = 61; with 5% $SbCl_5$ = 60.0, 3% BF_3 = 60.0% Cl in end product. In $C_2H_2Cl_4$ at 130-6° with 1% $TiCl_4$ = 60.9, 3% $TiCl_4$ = 60.7-2.5, 5% $TiCl_4$ = 61.7% Cl_2; with 3% $SbCl_5$ = 61.3, 5% $SbCl_5$ = 64.7; with 5% PCl_5 = 61.0% Cl. Chlorination in PhCl at 130-2° for 4.5 hrs. gave with 1% $TiCl_4$ = 58.2, 3% $TiCl_4$ = 59.3, 5% $TiCl_4$ = 59.4% Cl; with 5% $SbCl_5$ = 58.3, 5% BF_3 = 59.3% Cl in final I. A catalyst mixt. of $TiCl_4$ and BF_3 (anisole complex) in PhCl (130-2°, 4.5 hrs.) gave I with 60.2% Cl, in $C_2H_4Cl_2$ (82-4°, 5 hrs.) 58.5%, in $C_2H_2Cl_4$ (130-2°, 3.5 hrs.) 60.7%. Mol. wts. of the I obtained were 29,000-52,000. No correlation was found between Cl content and mol. wt. Catalyst concn. in excess of 3% did not improve the rate of chlorination.

Roland E. Kselbich

COUNTRY   : Hungary   I
CATEGORY   : High Polymer Chemistry

ABS. JOUR.   : RZKhim., No. 21   1959, No.   77238

AUTHOR   : Csuerzes, Z., Groszman, M., Geczy, I., and Juhasz,
INST.   : Hungarian Academy of Sciences   K.
TITLE   : Rheological Investigations of High Polymers. IV.
                Rheological Studies on Polyvinylchloride Pastes.
                Part II. Effect of Temperature on Polyvinylchlor-
ORIG. PUB.   : Magyar Tud Akad Kem Tud Oszt Koezl, 10, No 4, 467-
                473 (1958); Acta Chim Acad Sci Hung, 19, No 1,
ABSTRACT   : The dependence of the apparent viscosity of PVC
                pastes obtained by the use of dialkylphthalates
                as plasticizers (P) (PVC/P ratios of 60 : 40, 50 :
                50, 40 : 60) on the temperature has been investi-
                gated in the temperature range 20-60°. It has
                been shown that the swelling point observed by
                Elers and Gol'dshteyn for the dilution of PVC
                suspensions, above which the viscosity sharply
                increases, also holds for the pastes tested, at
                lower temperatures (25-40°). At the swelling

CARD: 1/5   * ide.

ABS. JOUR.   : RZKhim., No. 21   1959, No.   77238

AUTHOR   :
INST.   :
TITLE   :

ORIG. PUB.   :

ABSTRACT   : point the viscosity passes through a minimum. The
                character of the above dependence is explained
                theoretically, starting from the concept that the
                pastes represent heterogeneous systems consisting
                of the surface-swelling PVC grains as the dis-
                persed phase and P (containing the PVC in solu-
                tion) as the dispersing medium. For the composi-
                tions PVC/P = 40 : 60 and 50 : 50 the viscosity-
                temperature characteristic is parallel to the
                viscosity curve of P up to the swelling point,
                from which it follows that swelling does not

CARD: 2/5

GROSZMANN, M

5

... Studies on the rheology of macromolecular materials.
Determination of the molecular weight of polyethylene by a
viscosimetric method. Z. Csúros, I. Gróf, M. Grosz-
mann, V. Spiegel. Magyar Kémiai Folyóirat, Vol. 64,
1958, No. 5, pp. 166—167, 2 tabs.

The viscosities of non-fractionated polyethylene samples
of known molecular weight were measured in paraffin oil
at 85 and 140°C. The limiting viscosity values were obtained
by compensating calculation and from these also the k and
a values of the $[\eta] = kM_W^a$ equation were derived by this
method. The following correlations were found between the
limiting viscosity and molecular weight:

$$\text{at } 85°C \ [\eta] = 2.808.10^{-4} \cdot M_W^{0.762}$$
$$\text{at } 140°C \ [\eta] = 2.766.10^{-4} \cdot M_W^{0.713}$$

JW
1/1

HUNGARY/Chemical Technology. Chemical Products and Their   H
        Applications. Synthetic Polymers and Plastics.

Abs Jour: Ref Zhur-Khim., No 8, 1959, 29516.

Author : Csucros, Z., Groszmann, M., and Zsuffa, D.
Inst   :
Title   : Investigation of the Perchlorination of Polyvinyl-
          chloride.

Orig Pub: Magyar Chem Folyoiriat, 64, No 5, 168-169 (1958)
          (in Hungarian with German summary)

Abstract: Investigation of the perchlorination of PVC in
          various solvents at their boiling point has shown
          that the rate of the reaction is faster in high-
          boiling solvents than in low-boiling solvents.
          However, the utilization of solvents of the tetra-

Card   : 1/2

chloroethane (bp 150°) type is not recommended,
since it can result in a partial decomposition
of the polymer. The chlorination can be accele-
rated by the addition of a mixed catalyst (5%
$TiCl_4$ + PCl_5), in the presence of which complete
solubility of the polymer in acetone is achieved
after 5 hrs of chlorination in dichloroethane;
when 5% $TiCl_4$ is used, such an effect is achieved
only after 8 hrs. -- L. Pesin.

Card   : 2/2

GROSZMANN, M.

Distr: 4E2c(j)

Rheological investigations of macromolecular substances. IV. Rheological investigations of poly(vinyl chloride) pastes. 2. Effect of temperature on poly(vinyl chloride) (PVC) pastes. Zoltan Csuros, Miklos Groszmann, Istvan Géczy, and Kalman Juhász (Tech. Univ., Budapest). Acta Chim. Acad. Sci. Hung. 19, 65-73(1959)(In German); cf. CA 52, 11526b.—The temp. dependence of the quasi-viscosity of poly(vinyl chloride) pastes made with dialkyl phthalate plasticizers is studied. The Ehlers-Goldstein swelling point (CA 45, 2257a) of PVC pastes is lower than that of dild. suspensions. This temp. is also the point of min. viscosity. PVC pastes are considered as heterogeneous suspensions (CA 52, 11526b), and a theoretical interpretation of the swelling point phenomenon is presented upon this basis.   C. A. Hirch

Groszmann, M.; Bertalan, Gy.; Csuros, Z.

Rheologic investigations of macromolecular substances. V.
Determination of the secondary transformation point by means of the
Hoppler consistometer. In German. p.113

PERIODICA POLYTECHNICA. CHEMICAL ENGINEERING. (Budapesti Muszaki Egyetem)
Budapest, Hungary. Vol.3, no.2, 1959

Monthly List of East European Accessions. (EEAI) LC, Vol.8, no.11
November 1959
Uncl.

ROSZMANN, M

/ Action of different catalysts in the further chlorination of poly(vinyl chloride) in solution. Zoltan Csuros, Miklos Groszmann, and Béla Zsuffa (Tech. Univ. Budapest, Hung.) *Opt. matières plastiques* 6, No. 54, 53–5(1959).—The increase in Cl content and the decrease in mol. wt. of poly-(vinyl chloride) (I) which took place on further chlorination was studied. The effect of the solvent (CCl₄, dichloroethane (II), tetrachloroethane, and PhCl) and of the catalyst (PCl₃, TiCl₄, SbCl₃, BF₃, and mixts. of these) on the course of the chlorination was detd. For a given amt. of catalyst I was the best solvent. Increasing the concn. of the catalyst above 3% did not increase the chlorination rate. The extent of the decrease in mol. wt. is chiefly a function of the temp. (130° is the optimum) and also of the time of chlorination. I originally had 55% Cl and a mol. wt. of 60,000. The chlorination products ranged between 56.2 and 64.7% Cl and had mol. wts. of 29,000 to 53,000.

C. L. Deasy

Distr: 4E2c(j)

POLAND/Radio Physics - Application of Radiophysical Methods.   I

Abs Jour   : Ref Zhur Fizika, No 2, 1960, 4301

Author   : Groszyk, T.
Inst   : -
Title   : Use of Elliptic Polarization in Airport Radars

Orig Pub   : Prace Przemysl. inst. telekomum., 1959, 9, No 26, 15-19

Abstract   : The atmospheric conditions in Poland are described along
               with the effective surfaces of airplanes which are used
               in intercity aviation lines. The effect of rain on the
               operation of the radar is considered along with the re-
               sults of the use of elliptical polarization. The calcu-
               lations are carried out for the 10, 23, and 50 cm bands,
               used most frequently in airport radars. In conclusion,
               a radar operating with circular polarization in the 10
               cm band is compared with the station operating with
               linear polarization in the 50 cm band.

Card 1/1

1. ARKHIPOV, K.; FOT, A. E.

2. USSR (600)

4. Dams

7. Using alkaline soils in hydraulic engineering construction work, Khlopkovodstvo,
    No. 9, 1952.

GROT, A. I.

BEZRUK, V.M.; MOTYLEV, Yu.L.; GROT, A.I.; ZNAMENSKIY, A.I.; IERUSALIMSKAYA,
    M.F.; GERBURT-GEYBOVICH, A.V., redaktor; KOVALIKHINA, N.F., tekhni-
    cheskiy redaktor

[Building roads on saline soils and shifting sands] Stroitel'stvo
dorog na zasolennykh gruntakh i podvizhnykh peskakh. Moskva,
Avtotransizdat, 1953. 202 p.   (MLRA 7:8)

1. Moscow. Dorozhnyy nauchno-issledovatel'skiy institut.
        (Road construction)

SOV/124-58 10-11640

Translation from Referativnyy zhurnal, Mekhanika, 1958, Nr 10, p 135 (USSR)

AUTHOR   Grot, A. I.

TITLE: Ultimate Shear Stress in Gypsum-permeated Dusty-loam Soils of
            Fluid and Plastic Consistency (Predel'noye napryazhenive sdviga v
            gipsirovannykh pyle-ato-suglinistykh gruntakh tekuchey i plastichnov
            konsistentsii)

PERIODICAL   Tr Sredneaz. n. -i. in-ta irrigatsii, 1957, Nr 90, pp 109-122

ABSTRACT   Results are presented of ultimate shear stress investigation under
            conditions of fluid and soft plastic consistency characteristic of
            cohesive alluvial soils during a construction period

                                                    From the résumé

Card 1/1

GROT, G.

Persnoal plans of technical development. NTO 5 no.7:6   Jl '63.
                                        (MIRA 16:8)
1. Uchenyy sekretar' pervichnoy organizatsii nauchno-tekhni-
cheskogo obshchestva Taganrogskogo kombaynovogo zavoda.
       (Taganrog—Agricultural machinery industry)

MITKEVICH, E.M.; KARPENKO, V.G.; KNIGAVKO, I.P.; GROT, L.S.

Corrosion of apparatus in the production of potassium by the
alkali method. Zhur.prikl.khim. 36 no.1:109-114 Ja '63.
(MIRA 16:5)

1. Nauchno-issledovatel'skiy institut osnovnoy khimii.
(Potash industry—Equipment and supplies)
(Corrosion and anticorrosives)

GROT, L. Yu.

3-58-6-10/34

AUTHOR: Grot, L. Yu. and Sokolov, Yu.S., Candidates of Economic
            Sciences

TITLE: More Qualified Printed Lectures on Political Economy (Bol'she
            kvalifitsirovannykh pechatnykh lektsiy po politicheskoy ekonomii)

PERIODICAL: Vestnik Vysshey Shkoly, 1958, Nr 6, p 42-50 (USSR)

ABSTRACT: The printed aids issued periodically by the Upravleniye prepo-
            davaniya obshchestvennykh nauk Ministerstva vysshego-obrazo-
            vaniya SSSR (Administration of Social Science Teaching of the
            USSR Ministry of Higher Education) are intended to help vuz
            instructors raise the ideological and theoretical level of
            lectures on the economic theory of Marxism-Leninism. In 1957,
            the administration issued 7 such aids on political economy.
            The author gives a review of these instructional aids starting
            with the work of V.A. Zhamin, "The Reorganization of Agri-
            culture in the Chinese People's Republic", and those of I.K.
            Vereshchagin, "The Operation of the Basic Economic Law of Capi-
            talism in the Epoch of Imperialism" and "The Concentration of
            Production and the Supremacy of Monopolies", which he considers
Card 1/2   the best ones. "The Reproduction of Public Capital" is the

More Qualified Printed Lectures on Political Economy   5-58-6-10/34

title of M.T. Nagavitsyn's work and the printed lecture of
G.S. Kravchenko bears the name "Capital and Additional Costs",
and is intended for the course "The Capitalistic Method of Pro-
duction". Two booklets are dedicated to the problems of the
transitional period from capitalism to socialism: V.S. Chel-
nokov's "Transitional Period from Capitalism to Socialism"
and R.Ya. Akopov's "Transitional Period from Capitalism to
Socialism".
There are 6 Soviet references.

ASSOCIATION: Moskovskiy tekhnologicheskiy institut lëgkoy promyshlennosti
              (Moscow Technological Institute of Light Industry)

Card 2/2

GROT, Lidiya Yul'yevna; DEMENT'YEV, V., red.; GARINA, T.D.,
tekhn. red.

[Preparing for and conducting seminar studies on economics]
Podgotovka i provedenie seminarskikh zaniatii po politiche-
skoi ekonomii. Moskva, Vysshaia shkola, 1962. 115 p.
                                        (MIRA 15:7)
          (Economics—Study and teaching)

GROTE, G.

New forms of cooperation between foreign trade and industry.
Pod org 17 no.10:476-477 O '63.

GROTE, G.V., kand.tekhn.nauk; MALINSKIY, V.F., kand.tekhn.nauk; LISOVSKIY,
P.K., inzh.; OREKHOV, V.I., inzh. (Odessa)

Using magnetophone telephones as a means of communication in
organizing train traffic. Zhel.dor.transp. 41 no.3:71-73
Mr '59.   (MIRA 12:6)
                    (Railroads—Telephone)

KOZ'MIN, K.N., kand.tekhn.nauk; OLEYNIKOV, V.M., kand.tekhn.nauk;
     GROTE, G.V., kand.tekhn.nauk, nauchnyy red.; VOROB'YEV, G.S.,
     red.izd-va; GURDZHIYEVA, A.M., tekhn.red.

     [Modern locomotive manufacture in the U.S.S.R. and in foreign
     countries] Sovremennoe lokomotivostroenie v SSSR i za rubezhom.
     Leningrad, Ob-vo po rasprostraneniiu polit. i nauchn.znanii RSFSR,
     Leningr.otd-nie, 1960. 42 p.   (MIRA 13:8)
                    (Locomotives--Construction)

GROTOV, D., zhurnalist; SLAVNITSKAYA, N.N., red.

[IUrii Berezin and his friends] IUrli Berezin i ego
druz'ia. Riazan', Riazanskoe knizhnoe izd-vo, 1963. 39 p.
                                                 (MIRA 18:7)

GROTOVSKIY, K. M.

56-6-38/47

AUTHORS: Berlovich, E. Ye. , Grotovskiy, K. M. , Bonits, M. P. , Gorodins-
kiy, G. M.

TITLE: The Life of a 264 KeV-Level of the Er^{167} Nucleus
(Vremya zhizni urovnya yadra Er^{167} s energiyey 264 KeV)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1957, Vol. 33,
Nr 6   , pp. 1523 - 1524 (USSR)

ABSTRACT: By means of coincidence measurements the half-life of the 264
KeV-level of the Er^{167} nucleus was measured at $T_{1/2}=(2,0\pm0,5)\cdot10^{-9}$ s

and herefrom a half-life of radiation of $T = 1,4 \cdot 10^{-8}$ s was com-
puted.
The quadrupole moment computed herefrom is greater by the factor 2
than the measured one. This discrepancy is probably due to the in-
accurate determination of the E 2 and M 1 ratio of this γ-transi-
tion. There are 1 figure, and 8 references, 7 of which are Slavic.

Card 1/2

'The Life of a 264 KeV-Level of the Er^{167} Nucleus   56-6-38/47

ASSOCIATION: Leningrad Physico-Technical Institute AN USSR
               (Leningradskiy fiziko-tekhnicheskij institut Akademii nauk SSSR)

SUBMITTED: August 2, 1957

AVAILABLE: Library of Congress

Card 2/2

GROTOWSKI, K.

P O L .

537.542 : 537.583

3593. Effect of thermionic emission at room temperature in photosensitive Geiger-Müller tubes. K. GROTOWSKI, A. Z. HRYNKIEWICZ AND H. NIEWODNICZAŃSKI. *Bull. Acad. Polon. Sci.* Cl. 3, 2, Nl. 3-4, 109-11 (1953).

Reports a study of the increase in background level with temperature which is often observed as an ageing effect with G-M counters. New, clean tubes did not show any dependence of background on T. However, when the counters were made photosensitive by running a discharge in argon, these tubes exhibited a strong increase in background count with T. The difference in count between the two runs was assumed to give a measure of the thermionic emission. The data thus obtained were used for a Richardson plot which proved to be a straight line with work function $\simeq 1 \cdot 0$ eV. The thermionic origin of the background count is thus confirmed.   A. H. W. BECK

GROTOWSKI, K.   Poland

Glaser's chamber (bubble chamber)

SO: Progress in Physics, Poland, Vol. 6, #3, 1955, Unclassified.

Grotowski, K.

POLAND/Physical Chemistry - Radiochemistry, Isotopes.   B.

Abs Jour   : Ref Zhur - Khimiya, No 14, 1958, 45842

Author   : Kazimierz Grotowski
Inst   : -
Title   : Nuclear Radioactivity and Methods of Its Measurement.

Orig Pub   : Hutnik (Polska), 1956, 23, No 4, 145-153

Abstract   : Review. Bibliography with 14 titles.

Card 1/1

Grotowski, K.

POLAND/Physical Chemistry - Molecule, Chemical Bond.   B-4

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3591.

Author : A. Budzanowski, K. Grotowski, J.A. Janik, F. Maniavski,
          H. Rzany, A. Szkatula, A. Wanic.
Inst   : Academy of Sciences of Poland.
Title   : Estimation of The Potential Barrier Height of Torsional Ro-
          tation in CH SH Molecules by Means of Slow Neutron Scattering.

Orig Pub: Bull. Acad. polon. sci., 1957, Cl. 3, 5, No 3, 295-297.

Abstract: An estimation of the potential barrier height of internal tor-
          sional rotation V_0 of the methyl mercaptan molecule CH_3SH was
          carried out by the method of thermal neutron scattering. The
          neutron source was 100 curie of Ra mixed with Be according
          to the reaction (α, n). The effective crosssection for the
          CH SH molecule (δ CH_3SH = 194.1 ± 5 barn), determined by the
          method of relative beam attenuation, was measured. Water was
          used as the standard liquid (δ H_2O = 91 barn). The effective

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POLAND / Physical Chemistry - Molecule, Chemical Bond.   B-4

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3591.

POLAND/Nuclear Physics -- Installations and Instruments. Methods   C-2
of Measurement and Research

Abs Jour : Ref Zhur - Fizika, No 9, 1958, No 19761

Author   : Budzanowski Andrzej, Grotowski Kazimierz
Inst   : Institute of Nuclear Research, Karkow, Poland
Title   : Multi-plate Ionization Chamber for the Detection of Slow
           Neutrons.

Orig Pub : Acta phys. polon., 1957, 16, No 1-2, 135-138

Abstract : Description of an ionization chamber with electron gathering,
           the electrodes of which are coated with a layer of natural
           boron of thickness 3 mg/cm^2. Each electrode of the chamber
           consists of three disks, placed between plates of the other
           electrodes. The capacitance between the electrodes does not
           exceed 15 micromicrofarads. The technology of coating the
           layer is as follows: the boron is mixed with alcohol and a
           small amount of Canada balsam and is coated in the form of
           an emulsion on the plates. The chamber efficiency is approx-
Card   : 1/2

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POLAND/Nuclear Physics - Installations and Instruments. Methods   C-2
        of Measurement and Research

Abs Jour : Ref Zhur - Fizika, No 9, 1958, No 19761

        imately 2%. The filler is argon at atmospheric pressure.
        The duration of the output pulses after forming is approx-
        imately 5 microseconds.

Card   : 2/2

GROTOWSKI, K.

Estimation of the height of the potential barrier of hindered rotation in the CH_3SH molecule by means of thermal neutron scattering, W. Budzianowski, K. Grotowski, J. A. Janik, W. Kolos, F. Maniawski, H. Rzany, A. Szkatula, and A. Wanic (Polish Acad. Sci., Warsaw). Acta Phys. Polon. 16, 335-42(1957); cf. C.A. 46, 18454b; Kūb, C.A. 50, 1468d.—In this paper the potential barrier height H of internal hindered rotation of MeSH was estd. by means of a method based on the scattering of thermal neutrons with a Maxwellian energy distribution (mean neutron energy, 0.037 e.v.). The cross section of MeSH mols. measured by thermal neutron scattering was (194.5 ± 5) b., detd. by the method of relative attenuation of the beam. H_2O was used as a standard liquid (σ_{H_2O} ~ 91 b.). The cross section for rigid MeSH mols. calcd. on the basis of the theory of Sachs and Teller (C.A. 35, 5785[1]) was σ_{rig} ~ 258 b. By assuming H ~ 705 cal./mole and by taking into account the hindered rotation and the vibration of the atoms, the cross section of the MeSH mols. is calcd. to be σ_{theor} ~ 202 b. The cross section for collisions that are elastic with regard to hindered rotation was also calcd. under the assumption that H ~ 1460 cal./mole, this value being obtained by thermodynamic methods. The discussion of the results leads to the conclusion that a height of 705 cal./mole found by microwave spectroscopic methods should be ascribed to the potential barrier in MeSH rather than the value obtained by thermodynamic methods.   H. H. Jaffé

GROTOWSKI, K.

*On Leave from the Institute for Nuclear Research, Polish Academy of
Sciences, Krakow.

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P/048/61/006/007/006/008
D249/D302

2/. 4200

AUTHORS: Grotowski, Kazimierz, Rapacki, Henryk, and Słapa,
                  Mieczysław

TITLE: The inert gas purifier

PERIODICAL: Nukleonika, v. 6, no. 7-8, 1961, 517-522

TEXT: This is a description of a simple apparatus, working on the prin-
ciple of thermal circulation, for producing pure inert gases suitable for
nuclear detector devices. Small amounts of N_2 and CO_2 are usually harmless,
but electronegative gases like O_2, H_2O or Cl_2 must be removed. The common-
est methods of purification are listed as: (1) absorption in an activated
charcoal trap at low temperatures (for He and Ne only); (2) removal of O_2
by liquid sodium; (3) circulation over heated metallic Ca, possibly with
admixtures of Mg, Cu or U. The latter method removes up to several percent
of O_2 and is capable of continuous operation. Methods (1) and (3) have been
used at the Cracow Center of Nuclear Physics. The thermal circulation

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The inert gas...

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apparatus (of Gl. capacity) is shown in Fig. 1 The gas circulates through
a steel column (1) containing a number of copper trays (2) holding Ca and
Mg shavings, through horizontal pipes (3,4), valves (5,6,7,8) and a detec-
tor (9). A manometer (10) and vacuum gauges (11) are provided. The trays,
which are perforated to facilitate gas flow, are held in good thermal con-
tact with the wall by means of phosphor-bronze springs. The filter column
itself is heated with a W resistance element (15), wound non-uniformly to
give even distribution of temperature, measured with a resistance thermome-
ter (18) which is connected to a thermoregulator (19). The apparatus, which
may be used at up to 10 atm., must be thoroughly out-gassed by flushing with
argon at a few atmospheres for 5 hours and pumping out before operation.
The degree of purification depends on the filter temperature, time of puri-
fication, gas pressure and the absorbing metals. The effects of these 4
parameters were investigated with a grid ionization chamber. For high
concentrations of impurities, it is sufficient to measure the pulse ampli-
tude as a function of the purification time at a constant temperature.
Pulse height increases with increasing purity of the gas to a maximum of
99.99%. To assess higher purities, it is necessary to measure the pulse
height v. voltage applied on the chamber when a plateau is reached at
99.99%. /Abstractor's note: Figures given appear inconsistent_/. The grid
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The inert gas...

consisted of two 0.09 mm W wires spaced 2.1 mm apart, mounted 49 and 10 mm from the anode and the collector respectively. 6% resolutions were obtained with this apparatus for x-particles from natural U (4.20 and 4.76 Mev). Using Ca filters and commercial argon at 3 atm., the purifications were attained after ∼ 1 hr. at 320°C, ∼ 2½ hrs. at 280°C and ∼ 5 hrs. at 250°C. Lower purity was achieved at 210°C under the same conditions. Using Ca 10% Mg in filter trays at the same pressure of argon, the purifications required ∼ 1¼ hrs. at 250°C and ∼ 3 hrs. at 210°C. The measurements with argon at 9 atm. showed that the time of purification (∼ 3½ hrs.) is roughly proportional to the gas pressure. The temperature and filter material used in the last experiment are not given. The amount of used Ca was 22 gr. /Abstractor's note: Presumably per operation_/. The authors express their gratitude to Professor H. Niewodniczański and to A. Budzanovski and Z. Wroński for their support and assistance. There are 8 figures and 4 references: 2 Soviet bloc and 2 non-Soviet-bloc. The 2 references to English-language publications read as follows: U. Facchini and A. Helvicin, Nucleonics, 13, 36 (1955); L. Herwig, G. Miller and N. Utterback, Rev. Sci. Inst., 26, 929, (1955).

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The inert gas...

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P/046/61/006/007/006/008
D249/D302

ASSOCIATION: Polish Academy of Sciences, Institute of Nuclear Physics,
                Cracow

SUBMITTED: May, 1961

Fig. 1. Diagramatic sketch of the inert gas purifier
1: a filter column; 2: trays with calcium splints; 3,4: horizontal pipes;
5,6,7,8: valves; 9: detector; 10: manometer; 11: vacuum gauge; 12: central
rod; 13: upper lid; 14: copper sealing; 15: heater; 16: asbestos thermal
isolation; 17: steel protector; 18: resistance thermometer; 19: thermoregu-
lator; 20,21: water-cooling connections.

Card 4/5

GROTOWSKI, Kazimierz; RAPACKI, Henryk; SLAPA, Mieczyslaw

The inert gas purifier. Nukleonika 6 no.7/8:517-522 '61.

1. Polish Academy of Sciences, Institute of Nuclear Physics, Krakow.

BUDZANOWSKI, A.; GROTOWSKI, K.

Elastic scattering angular distributions and total reaction
cross sections for the interaction of 12.8 MeV deuterons with
^{58}Ni and ^{60}Ni nuclei. Inst fiz jadr report no.201:1-5 Ag '62.

1. Instytut Fizyki Jadrowej, Krakow.

GROTOWSKI, Kazimierz

Problems of an optical model for deuterons. Pt. 1.   Nukleonika
8 no.5:289-300 '63.

1. Instytut Fizyki Jadrowej, Krakow.

GROTOWSKI, Kazimierz

      Problems of the optical model for deuterons. Pt.2. Nukleonika
      8 no.6:355-369 '63.

      1. Instytut Fizyki Jadrowej, Krakow.

POLAND

PIETER, Regina, First Clinic of Internal Diseases (I Kli-
nika Chorob Wewnetrznych), AM [Akademia Medyczna, Medical
Academy] in Lodz and Science and Therapy Center (Osrodek
Naukowo-Leczniczy), Clinic (Klinika) in Busko-Zdroj (Di-
rector: Prof. Dr. med. sci. J. W. GROTT)

"Difference in Oxalic Acid Level in Plasma and Red Blood
Cells in Persons with Rheumatoid Diseases."

Warsaw, Polski Tygodnik Lekarski, Vol 18, No 26, 24 Jun 63,
pp 932-935

Abstract: [Author's English summary modified] Differences
in amount of oxalic acid (Grott method) in the plasma and
in the red blood cells (rbc) were studied in 611 persons
with rheumatoid diseases and 850 suffering from various
musculo-articular symptoms and compared. Plasma oxalic
acid was normal for most persons of both groups, and higher
in the rbc of both groups. Differences up to 20 mg/100 cc
were most frequent (33.3 and 31.3%), 20-40 mg in 20.2 and
18.5%, and over 41 mg -- in 20.2 and 12.8%. Author sug-
gests that the differences in plasma and rbc oxalic acid
can help in early diagnosis of oxalic acid disorders.
3 Polish and 4 English references.
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L 35575-65   EEC(b)-2/EWT(1)/EWT(m)/T   Peb   DIAAP/IJP(c)

ACCESSION NR: AP4049976   P/0047/64/015/005/0529/0546

AUTHOR: Grotowski, K.

TITLE: Optical model of the interaction between particles and atomic nuclei.

SOURCE: Postepy fizyki, v. 15, no. 5, 1964, 529-546

TOPIC TAGS: nuclear scattering, nucleon, nuclear bombardment, optical model, optical potential, Schrodinger equation

ABSTRACT: This is a review article on the use of an optical model to describe the elastic scattering of nucleons as well as of heavier particles by atomic nuclei. The paper begins with a fairly extensive discussion of the concept of optical potential. In this section the following topics are considered: shape elastic scattering, compound elastic scattering, the shape of the real part of the optical potential, the well-depth of the imaginary part of the optical potential, and spin relationships in the scattering of nucleons. The complete expression for optical potential is derived. In discussing the general relationships existing in optical potential, the paper makes use of extensive experimental data on the elastic scattering of nucleons. The following aspects of the optical model and

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